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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,051	06/11/2001	Emmanuel Salvador Viana Manlapig	8436.82USWO	1102
23552	7590	03/10/2004	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			LITHGOW, THOMAS M	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/787,051

Applicant(s)

MANLAPIG ET AL.

Examiner

Thomas M. Lithgow

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
The specification should specifically identify "Eh" by name at least the first time "Eh" is employed. The definition of Eh as supplied by applicant appears to be inconsistent with prior art identification of Eh. See for example US 6390303 which refers to Eh as the redox potential of the pulp. Clarification is required.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The term "Eh" employed in the original disclosure was not defined by the original

specification. Applicant has provided the phrase "the potential of a reaction under nonstandard conditions". This is at odds with the prior art recognized interpretation of Eh (see US 6390303) which is the pulp redox potential. Clarification is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of the phrase "without the need for a collector" is unclear. It is unclear if the above phrase means a. flotation is conducted with no collector or b. the slurry is subjected to flotation with no xanthate collector- (see claim 15, 17)- or c. although you could conduct the flotation with no collector it is better to use some collector although at a reduced quantity than conventionally used or d. the phrase has no impact on how the flotation is operated as long as the

"Eh" is in the predetermined range. It appears the specification supports all four versions of the phrase. Clarification is required. The claims should clearly identify what property of the slurry "Eh" is suppose to represent and not employ shorthand that may lead to unclear interpretations of Eh. See the specification in this regard also. The types of cells recited in claim 11 is unclear. Claims 15 and 17 recite "without the need of a xanthate collector" and "using a non-xanthate collector". Both phrases may be at odds with the scope of claim 1- see above. Claims 15 and 17 are broader in scope than the claim 1 and are therefore improper dependent claims. Claim 18, the term "scalper" is unclear and further the phrase "the valuable sulfide mineral" lacks antecedent basis. Claim 20 "the remainder of the flotation circuit" lacks antecedent basis. The phrase "without the need for a collector" will be interpreted as if there were no collector.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11, 13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy (Mining Magazine) in view of Heimala (US 4561970). Kennedy(MM) discloses the basic flotation process of separating sulfide mineral ores employing a Jameson pneumatic flotation cell having a residence time of about 1 minute (page 283, col. 2, line 5+). Heimala '970 discloses process for the separation and recovery of valuable sulfides from other less valuable minerals (including other sulfides) in a flotation process using measurement of oxidation-reduction (Redox) potentials as a basis for the separation control. It is noted that under some conditions the flotation of chalcopyrite may be accomplished by employing "no collector" by means of controlling the Redox potential (col. 5, lines 15-20). Heimala discloses that elemental sulfur acts as the "collector" in the "no collector" separation. Claim 2 of Heimala discloses the use of the Redox controlled formation of the "collector" with out directly adding any traditional collector. It is axiomatic to one of ordinary skill to employ less collector and none if possible to reduce the attendant costs associated with the handling and purchasing of the reagents. To modify the sulfide separation process of Kennedy(MM) to operate in the collectorless region by controlling the electrochemical potential of the pulp as taught by

Heimala('970) would have been obvious to one of ordinary skill in the art at the time of the invention.

5. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy(MM) in view of Australasian IMME-1984 (AIMME). As noted above, Kennedy(MM) discloses the basic flotation process of separating sulfide mineral ores employing a Jameson pneumatic flotation cell having a residence time of about 1 minute (page 283, col. 2, line 5+). AIMME discloses the self induced (no collector) flotation of many minerals by controlling the Ox-Red (redox) Potentials of the pulp slurry containing the mineral species. As shown of page 119 the flotatability of many minerals are presented including chalcopryrite (Cp)and chalcocite (Cc). To modify the sulfide separation process of Kennedy(MM) to operate in the collectorless region by controlling the electrochemical potential of the pulp as taught by AIMME would have been obvious to one of ordinary skill in the art at the time of the invention.

6. Claims 1-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy(MM) in view of Ahn et al (IJMP).).

Kennedy(MM) discloses the basic flotation process of separating sulfide mineral ores employing a Jameson pneumatic flotation cell having a

residence time of about 1 minute (page 283, col. 2, line 5+). Ahn discloses the self-induced (collectorless) flotation of chalcopyrite by controlling the ORP (redox potential) of the flotation pulp.

Response to Arguments

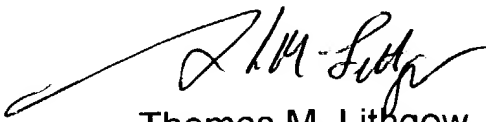
7. Applicant's arguments filed 30 December 2003 have been fully considered but they are not persuasive. The examiner will address the prior art to the extent necessary considering a new rejection is applied in the case. Applicant asserts the prior art of Ahn, AIMME and Heimala disclose the use of mechanical cells which are not pneumatic cells. There appears to be no specific mention in any of the above three documents which would allow one to know if a mechanical cell is employed or a pneumatic cell is employed. Therefore the best way to characterize the 3 references is to say they are silent as to the exact nature of the flotation cell employed. The benefits of the Jameson cell (a type of non-mechanical aka pneumatic cell) employed in the Kennedy article compared to conventional flotation cells (mechanical and pneumatic—a counter current sparge column) are clear. Smaller pumps, smaller pulp inventories and a reduced residence time are the primary benefits as noted at pg. 283, col. 1, lines 8+ as well as reduced

equipment tank sizes since the residence times are low resulting in high through puts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M. Lithgow whose telephone number is 571-272-1162. The examiner can normally be reached on Mon. -Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blain Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Thomas M. Lithgow
AU 1724
Primary Examiner